

METHODS AND APPARATUS FOR SEALED FIBER OPTIC FEEDTHROUGHS

ABSTRACT

Methods and apparatus for hermetically sealing an optical fiber in a feedthrough connection. In brief overview, the optical fiber is mounted in a housing whose physical properties differ from that of the fiber by utilizing a structure in accord with the present invention. The structure, typically in transition bushing form, is formed from at least two materials, such that the physical properties of a first material are selected to match the physical properties of the optical fiber, and the physical properties of a second material are selected to match physical properties of the housing. When the matched physical properties are the coefficients of thermal expansion (CTE) of the fiber and the housing, the result is a fiber optic mounting that remains hermetically sealed despite changes in ambient temperature that would typically induce stresses in the seal, potentially causing its failure.

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